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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,670	12/28/2001	Antonio J. Colmenarez	US010641	1814

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EXAMINER

UPRETI, ASHUTOSH

ART UNIT PAPER NUMBER

2623

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/034,670	<b>Applicant(s)</b> COLMENAREZ ET AL.	
	<b>Examiner</b> Ashutosh Upreti	<b>Art Unit</b> 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 2 and 16 are objected to because of the following informalities:

As to claim 2, it repeats a limitation ("determining an input image from the signal comprising images from a plurality of cameras") from claim 1, from which it depends. It is unclear whether this is meant to constitute a new step or if it is merely restating the limitation of claim 1. Removing this limitation from claim 2 would cure this problem.

As to claim 16, the fact that the code makes a computer implement the method is not made clear. On line 4, inserting the words "which causes a computer to implement a method" should be inserted between the words "means" and "comprising" to cure this problem. Program code on its own is not patentable material.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 6, 11, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Endo (U.S. Patent Application 2002/0039203 A1).

As to claim 1, Endo discloses matching an input image with one of a plurality of states (paragraph 0117, lines 5-7). Here the image is classified into a group depending on which physical location the image was originally taken in. There is a plurality of groups (paragraph 0099, line 4 mentions "groups" as opposed to "group") and "groups" are considered to be the same as "states". The above sections of Endo describe an invention that is present on a digital camera. Endo does however state that it can be applied to a personal computer, which is not part of a camera (paragraph 0151, lines 7-10). Endo also discloses that when in this form, the input image is from a signal (paragraph 0158, lines 3-4, if electronically transmitting, it must be a signal) with images from a plurality of digital cameras (paragraph 0158, lines 9-10). Endo discloses assigning an input image to a group if that image matches the requirements of belonging to that group. This is disclosed by the use of thresholds to determine which group an image belongs to (paragraph 0099, lines 1-4).

As to claim 2, Endo discloses determining input information from the input image (paragraph 0117, lines 5-7). Here the images are classified into groups based on position information (a form of input information), after that information has been stored with each image (paragraph 0117 lines 2-3). Endo also discloses comparing input image information with state image information corresponding to each state (paragraph 0099 lines 1-4). Here it shows that each group only accepts images from certain locations. This means that location information from the image must be compared to locations information of the group. Endo discloses classifying (or assigning) the input

images to a group when the input image information matches the group image information of that group (paragraph 0099, lines 1-4, see discussion above).

As to claim 6, Endo discloses outputting an input image in a manner that shows what group it belongs to (paragraph 0159, lines 3-4).

As to claim 11, Endo discloses the use of a predetermined ("fixed") threshold for determining if an image belongs to a group (paragraph 0099, lines 1-4).

As to claim 13, Endo discloses determining a plurality of features from the input image (Figure 7 – here several types of locations information are associated with each image). Since the image is compared to other groups in terms of location (see claim 2), it follows that a plurality of information is being compared between the input image and the groups (i.e. latitude, longitude etc.). Regarding the limitations about assigning the image to a state and using thresholds, the limitations are rejected for the same reasons as in claims 2 and 1 respectively.

As to claim 15, Endo discloses using a personal computer (paragraph 0157, line 2), which inherently must have a processor and memory with readable code for it to work. The other limitations are rejected for the same reasons as in claims 1 and 2.

As to claim 16, Endo discloses using a personal computer to implement steps of the method (paragraph 0157, line 2). The use of software is inherent on a computer implementing a method. The other limitations are rejected for the same reasons as in claims 1 and 2.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo as applied to claim 2 above, and further in view of Colmenarez (U.S. Patent 6,801,656).

As to claim 5, Endo as applied above does not expressly disclose performing training to determine the plurality of states. Colmenarez discloses techniques for determining the number of states (column 3, lines 41-43). In this case it involves the use of training data, meaning that a form of training is being performed. Training is also disclosed in column 8, lines 26-29. The limitation regarding a plurality of states is rejected for the same reasons as in claim 1.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to perform the training of Colmenarez to determine the plurality of states in Endo, as they both deal with processing images obtained from a plurality of cameras.

One would have been motivated to do this as would improve the speed and accuracy of state determination.

As to claim 14, Endo as applied above does not expressly disclose that each state is a state of a Hidden Markov Model. Colmenarez discloses that each state is a state of a Hidden Markov Model (column 3, line 14).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the Hidden Markov Model of Colmenarez when modeling the states of Endo, as they both deal with processing images obtained from a plurality of cameras.

One would have been motivated to do this as the Hidden Markov Model of Colmenarez would allow for greater adjustment of the number of states depending on the input data.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo as applied to claims 1 and 2 above, and further in view of Yoshida (U.S. Patent 6,317,160).

As to claim 7, Endo as applied above does not expressly disclose that the images on the input signal are asynchronous. Yoshida discloses images on input signals being asynchronous (column 4, line 24).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Endo to process the asynchronous images in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as it would enable the methods to be applied to a greater variety of camera systems.

As to claim 8, Endo does not expressly disclose multiplexing images onto a signal where the sequence of cameras from which the images are coming is not

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predetermined. Yoshida discloses multiplexing images onto a signal (Figure 1, 11) and further discloses that these images are in an asynchronous state (Column 6, lines 66-67) and does not state that the sequence of cameras is known. In addition to this, an identification signal is used to identify which camera an image came from (column 3, lines 13-16). These pieces of information together, further imply, that the sequence of cameras is unknown.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Endo to process images that are input from a signal containing images from a plurality of cameras, of unknown sequence, as in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as it would enable the methods to be applied to system where the camera sequence is unknown, hence resulting in applicability to a greater number of systems.

As to claim 9, Endo as applied above does not expressly disclose that the signals on the input signal are synchronous. Yoshida discloses images on input signals being synchronous (column 6, line 67 to column 7, line 2).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Endo to process the synchronous images in Yoshida, as they both deal with images obtained from a plurality of cameras.



One would have been motivated to do this, as it would make processing easier as more is known about a synchronous image signal prior to processing than an asynchronous signal.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo as applied to claims 1 and 2 above, and further in view of Brodsky (U.S. Patent Application 2002/0141637 A1).

As to claim 10, Endo as applied above does not expressly disclose determining if an event is occurring on an image by comparing the current image with previous images of a state. Brodsky discloses event detection (paragraph 0031 line 3) by means of comparing the present image with previous images from the same region (paragraph 0039 lines 4-8). Here a reference frame is used of the same scene and must be grouped or matched in some way to the present image and is therefore considered to be similar to a previous image of the same state. Regarding the limitation of associating the input image with one state, the limitation is rejected for the same reasons as in claim 1. Regarding the limitation of outputting the input image that is associated with a state, it is rejected for the same reasons as in claim 6.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the event detection of Brodsky with the image processing of Endo as they both deal with processing images obtained from a plurality of cameras.

One would have been motivated to do this, as it would increase effectiveness when the above inventions are utilized to surveillance system applications.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo as applied to claims 1 and 2 above, and further in view of Trajkovic (U.S. Patent Application 2002/0168106 A1).

As to claim 12, Endo as applied above does not expressly disclose determining a histogram from the input image, then comparing the input image with a histogram corresponding to each of the states to find a match. Trajkovic discloses determining a histogram from a dataset (Figure 3, 310) and comparing histograms from datasets (paragraph 0018, lines 1-2). Trajkovic clearly states that these datasets can involve images (paragraph 0018 lines 13-16). Also disclosed is comparing the dataset's histogram to a number of other dataset's histograms and trying to find the most similar match (Figure 3). Here, one dataset is considered to be the image and the other datasets that it is being compared to, are considered to be states. The support for considering one dataset to be an individual while considering the others to be groups is disclosed in Trajkovic (paragraph 0018, lines 8-12) where the possibility of a dataset being an individual while the other datasets are collections of individuals is presented. Here, individuals are analogous to images when the invention is applied in the present context. With regard to assigning an image to a state when a match is determined, the limitation is rejected for the same reasons as in claim 2.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the histogram comparisons of Trajkovic with the image

processing of Endo, as Trajkovic clearly states that the invention it describes is applicable to image processing.

One would have been motivated to do this, as it would enable effective comparisons between individual images and groups of images, which is useful when dealing with many images coming from different cameras.

### ***Allowable Subject Matter***

Claims 3, and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 3, the limitation regarding determining if at least one state exists is not expressly disclosed in the prior art.

As to Claim 4, the limitation regarding adding a new state that corresponds to the input image when the input image information doesn't match any state, is not expressly disclosed in the prior art.


### ***Contact Details***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashutosh Upreti whose telephone number is (703) 306 4087. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.U.  
February 10, 2005

  
Jon Chang  
Primary Examiner